

In re Patent Application of:
BAGNI ET AL.
Serial No. **09/728,506**
Filing Date: **December 1, 2000**
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REMARKS

Applicants would like to thank the Examiner for the thorough examination of the present application. Applicants would also like to thank the Examiner for correctly indicating as allowable the subject matter of dependent Claims 12, 15-16, 23, 26-27, 34 and 37-38.

With respect to the prior art FIGS. 1-5, the Examiner requested a copy of the patents or printed publication that includes these figures. The Applicants submit that these figures were self-generated for better explaining the present invention. Consequently, they were not taken from any publication.

The specification has been amended to correct a minor grammatical error. In addition, several of the claims have been amended to address the claim informalities as helpfully noted by the Examiner. The arguments supporting patentability of the claims are provided in detail below.

I. The Claims Are Patentable

Independent Claims 10, 20 and 31 have been rejected over the Yonemitsu et al. patent. The present invention, as recited in independent Claim 10, for example, is directed to a method for processing a bitstream of coded data of video sequences of progressive or interlaced pictures. The method comprises estimating motion vectors of groups of pixels belonging to a top half-frame of a current picture in relation to pixels belonging to a bottom half-frame of a preceding picture, and estimating motion vectors of groups of pixels of a bottom half-frame of the current picture in relation to pixels belonging to the top half-frame of the current picture.

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The method further comprises calculating for the top half-frame and the bottom half-frame of the current picture a respective top motion coefficient and a bottom motion coefficient based upon the estimation of the motion vectors of the top half-frame and the bottom half-frame. The current picture is recognized as an interlaced picture by a substantial equality of a distribution of values of the motion coefficients, or is recognized as a progressive picture by a substantial inequality of the distributions of values of the motion coefficients.

The method according to the present invention advantageously allows the detection of the progressive or interlaced content of a picture for improving the effectiveness of the coding of video sequences. The method also advantageously allows for an enhanced precision in the calculation of motion vectors by virtue of a pre-recognition of the processed picture as a progressive or interlaced picture.

Independent method Claim 20 is similar to independent method Claim 10 except the recitation "by a substantial inequality" has been removed with respect to recognizing the current picture as an interlaced picture or as a progressive picture. Independent device Claim 31 is similar to independent method Claim 20.

Referring now to the Yonemitsu et al., a method for processing a bitstream of coded data of video sequences of interlaced pictures is disclosed. Reference is directed to page 5, lines 22-27 of Yonemitsu et al., which provides:

"In view of the above-described status of the art, it is an object of the present

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invention to provide a picture data encoding method and a picture data encoding device whereby a picture produced by interlaced scanning may be encoded efficiently whether the picture is replete with motion, the picture shows only little motion or the picture replete with motion and the picture showing only little motion co-exist, and a picture data decoding method and a picture data decoding device for decoding picture data encoded by the encoding method and the encoding device." (Emphasis added.)

The Applicants respectfully submit that Yonemitsu et al. fails to disclose that the bitstream of coded data of video sequences of pictures may also be progressive pictures. Instead, Yonemitsu et al. is directed to the encoding of interlaced picture signals on a field-by-field basis or on a frame-by-frame basis. Reference is directed to page 5, lines 31-37 of Yonemitsu et al., which provides:

"A first picture data encoding method for encoding interlaced picture signals according to the present invention comprises deciding if encoding of picture signals is to be executed on the field-by-field basis or on the frame-by-frame basis, encoding the picture signals on the field-by-field basis or on the frame-by-frame basis, depending on the results of decision, for generating encoded picture data, and appending discrimination data to the encoded picture data based on the results of decision, the discrimination data indicating if the encoded picture data have been encoded on the field-by-field basis or on the frame-by-frame basis." (Emphasis added.)

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In other words, Yonemitsu et al. is directed to the processing of an interlaced picture, wherein the processing includes determining if the encoding is to be done on a field-by-field basis or on a frame-by-frame basis. This is in sharp contrast to the claimed invention, wherein the current picture being processed is recognized as an interlaced picture or as a progressive picture.


Therefore, the Applicants submit that independent Claim 10 is patentable over the Yonemitsu et al. patent. Independent Claims 20 and 31 are similar to independent Claim 10, and it is submitted that independent Claims 20 and 31 are also patentable over the Yonemitsu et al. patent. In view of the patentability of the independent claims as discussed above, it is submitted that their dependent claims, which recite yet further distinguishing features, are also patentable over the prior art. Thus, these dependent claims require no further discussion herein.

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CONCLUSION

In view of the amendments to the claims and the arguments provided herein, it is submitted that all the claims are patentable. Accordingly, a Notice of Allowance is requested in due course. Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,



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